

WHAT IS CLAIMED IS:

1. An isolated antimicrobial peptide comprising the amino acid sequence: MRIHYLLFALLFLFLVPVPGHGGIINTLQKYYCRVRGGRC AVL SCLPKE EQIGKCSTRGRKCCRRKK (SEQ ID NO: 2).

2. The antimicrobial peptide of claim 1, wherein said antimicrobial peptide is contained within a pharmaceutically acceptable composition.

3. The antimicrobial peptide of claim 2, wherein said pharmaceutically acceptable composition includes a pharmaceutically acceptable carrier.

4. The antimicrobial peptide of claim 2, wherein said pharmaceutical composition is formulated for topical administration.

5. The antimicrobial peptide of claim 2, wherein said pharmaceutical composition is formulated for oral administration.

6. The antimicrobial peptide of claim 2, wherein said pharmaceutical composition is formulated for parenteral administration.

7. The antimicrobial peptide of claim 6, wherein said pharmaceutical composition is formulated for administration by injection.

8. The antimicrobial peptide of claim 6, wherein said pharmaceutical composition is formulated for administration by inhalation.

9. A beta defensin encoding nucleic acid molecule isolated from other coding sequences, said nucleic acid molecule encoding a peptide comprising the amino acid sequence: MRIHYLLFALLFLFLVPVPGHGGIINTLQKYYCRVRGGRC AVL SCLPKE EQIGKCSTRGRKCCRRKK (SEQ ID NO: 2).

10. The nucleic acid molecule of claim 9, wherein said nucleic acid is incorporated into a vector.

11. A method of inhibiting growth of a microbe comprising introducing into an environment an antimicrobial peptide comprising the amino acid sequence: MRIHYLLFALLFLFLVPVPGHGGIINTLQKYYCRVRGGRC AVL SCLPKE EQIGKCSTRGRKCCRRKK (SEQ ID NO: 2).

12. The method of claim 11, wherein said peptide is introduced in a composition capable of sustaining the antimicrobial properties of said peptide in said environment.

13. The method of claim 12, wherein said antimicrobial peptide is delivered in a pharmaceutical composition.
14. The method of claim 11, further comprising introducing an additional antimicrobial agent into said environment.
- 5 15. The method of claim 14, wherein said antimicrobial peptide is introduced before said additional antimicrobial agent.
16. The method of claim 14, wherein said antimicrobial peptide and said additional antimicrobial agent are introduced concurrently.
17. The method of claim 14, wherein said antimicrobial peptide is introduced after
10 said additional antimicrobial agent.
18. The method of claim 14, wherein said additional antimicrobial agent is selected from the group consisting of a protein synthesis inhibitor, a cell wall growth inhibitor, a cell membrane synthesis inhibitor, a nucleic acid synthesis inhibitor, and a competitive inhibitor.
- 15 19. A method of inhibiting growth of a microbe in a host, comprising administering to said host an antimicrobial peptide comprising the amino acid sequence: MRIHYLLFALLFLFLVPVPGHGGIINTLQKY YCRVRGGRC AVLSC LPKE EQIGKCSTRGRKCCRRKK (SEQ ID NO: 2).
- 20 20. The method of claim 19, further comprising administering an additional antimicrobial agent.
21. The method of claim 20, wherein said antimicrobial peptide is administered before said additional antimicrobial agent.
22. The method of claim 20, wherein said antimicrobial peptide and said additional antimicrobial agent are administered concurrently.
- 25 23. The method of claim 20, wherein said antimicrobial peptide is administered after said additional antimicrobial agent.
24. The method of claim 20 wherein said additional antimicrobial agent is selected from the group consisting of a protein synthesis inhibitor, a cell wall growth inhibitor, a cell membrane synthesis inhibitor, a nucleic acid synthesis inhibitor, and a competitive
30 inhibitor.

25. A kit comprising an antimicrobial peptide, wherein said peptide comprises the amino acid sequence: MRIHYLLFALLFLFLVPVPGHGGIINTLQKYYCRVRGGRCALVLSCLPKEEQIGKCSRGRKCCRKK (SEQ ID NO: 2).

26. The kit of claim 25, further comprising an additional antimicrobial agent.

27. The kit of claim 26, wherein said second antimicrobial agent is selected from the group consisting of a protein synthesis inhibitor, a cell wall growth inhibitor, a cell membrane synthesis inhibitor, a nucleic acid synthesis inhibitor, and a competitive inhibitor.

28. An isolated antimicrobial peptide comprising the amino acid sequence: TLQKYY
10 CRVRGGRC AVL SCLPKEEQIGKCSTRGRKCCRRKK (SEQ ID NO: 3)

29. The antimicrobial peptide of claim 28, wherein said antimicrobial peptide comprises the amino acid sequence:GIINTLQKYYCRVRGGRCVLSCLPKEEQIGK CSTRGRKCCRRKK (SEQ ID NO: 4).

30. The antimicrobial peptide of claim 28, wherein said antimicrobial peptide is
15 contained within a pharmaceutically acceptable composition.

31. The antimicrobial peptide of claim 30, wherein said pharmaceutically acceptable composition includes a pharmaceutically acceptable carrier.

32. The antimicrobial peptide of claim 29, wherein said pharmaceutical composition is formulated for topical administration.

20 33. The antimicrobial peptide of claim 29, wherein said pharmaceutical composition
is formulated for oral administration.

34. The antimicrobial peptide of claim 29, wherein said pharmaceutical composition is formulated for parenteral administration.

35. The antimicrobial peptide of claim 34, wherein said pharmaceutical composition
25 is formulated for administration by injection.

36. The antimicrobial peptide of claim 34, wherein said pharmaceutical composition is formulated for administration by inhalation.

37. A beta defensin encoding nucleic acid molecule isolated substantially away from other coding sequences, said nucleic acid molecule encoding a peptide comprising the amino acid sequence: TLQKYYCRVRGGRC AVL SCLPK EEQIGKCSTRGRKCCRRKK (SEQ ID NO: 3).

38. The nucleic acid molecule of claim 37, wherein said nucleic acid is incorporated into a vector.

39. A method of inhibiting growth of a microbe comprising introducing into an environment an antimicrobial peptide comprising the amino acid sequence: TLQKYYCRVRGGRC AVL SCLPKEEQIGKCSTRGRKCCRRKK (SEQ ID NO: 3).

40. The method of claim 39, wherein said peptide is introduced in a composition capable of sustaining the antimicrobial properties of said peptide in said environment.

41. The method of claim 40, wherein said antimicrobial peptide is delivered in a pharmaceutical composition.

42. The method of claim 39, further comprising introducing an additional antimicrobial agent into said environment.

43. The method of claim 42, wherein said antimicrobial peptide is introduced before said additional antimicrobial agent.

44. The method of claim 43, wherein said antimicrobial peptide and said additional antimicrobial agent are introduced concurrently.

45. The method of claim 43, wherein said antimicrobial peptide is introduced after said additional antimicrobial agent.

46. The method of claim 43, wherein said additional antimicrobial agent is selected from the group consisting of a protein synthesis inhibitor, a cell wall growth inhibitor, a cell membrane synthesis inhibitor, a nucleic acid synthesis inhibitor, and a competitive inhibitor.

47. A method of inhibiting growth of a microbe in a host, comprising administering to said host an antimicrobial peptide comprising the amino acid sequence: TLQKYYCRVRGGRC AVL SCLPKEEQIGKCSTRGRKCCRRKK (SEQ ID NO: 3).

48. The method of claim 47, further comprising administering an additional antimicrobial agent.

49. The method of claim 48, wherein said antimicrobial peptide is administered before said additional antimicrobial agent.

50. The method of claim 48, wherein said antimicrobial peptide and said additional antimicrobial agent are administered concurrently.

51. The method of claim 48, wherein said antimicrobial peptide is administered after said additional antimicrobial agent.

5 52. The method of claim 48, wherein said additional antimicrobial agent is selected from the group consisting of a protein synthesis inhibitor, a cell wall growth inhibitor, a cell membrane synthesis inhibitor, a nucleic acid synthesis inhibitor, and a competitive inhibitor

10 .53. A kit comprising an antimicrobial peptide, wherein said peptide comprises the amino acid sequence: TLQKYCYCRVRGGRC AVL SCLPK EEQIGKCSTRGRKCCRRKK (SEQ ID NO: 3).

54. The kit of claim 53, further comprising an additional antimicrobial agent.

15 55. The kit of claim 54, wherein said additional antimicrobial agent is selected from the group consisting of a protein synthesis inhibitor, a cell wall growth inhibitor, a cell membrane synthesis inhibitor, a nucleic acid synthesis inhibitor, and a competitive inhibitor.